

# REPORT DOCUMENTATION PAGE

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13. ABSTRACT (Maximum 200 words)  <p>The influence of large seamounts on ambient oceanic biological, physical, chemical and geological environment was the focus of the "Flow Over Abrupt Topography" (TOPO) ARI. The research reported here comprised the water column zooplankton ecology component of the ARI. Our field program (1989 to 1991), centered on Fieberling Guyot (32° 25'N, 127° 47'W), with three other seamounts investigated: Dowd Guyot (13° 27'N, 119° 53' W), Northeast Bank (32° 20'N, 119° 37'W) and Sixtymile Bank (32° 05'N, 118° 15'W). Support for the studies at the latter two seamounts came from the United States-Israel Binational Science Foundation.</p> <p>The zooplankton studies tested three hypotheses: 1) mesoscale patches (gaps) of reduced numbers of migrating zooplankton occur over seamounts; 2) these gaps increase the patchiness of migrating species in the surrounding waters; 3) increased numbers of empty and partly empty exoskeletons (carcasses) of crustacean zooplankton occur throughout the water column over submarine elevations shallower than about 500 m.</p> <p>Hypothesis 1 was supported by the data for most zooplankton, not just migrators (Genin et al, 1994). Hypothesis 2 has not been falsified by our analyses to date, but the sampling appears to have been insufficient to verify it. Hypothesis 3 was shown to be true at some of the seamounts some of the time--the phenomenon appears to be highly variable in space and time.</p>				
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ZOOPLANKTON AROUND FOUR EASTERN NORTH PACIFIC SEAMOUNTS

FINAL TECHNICAL REPORT

Office of Naval Research Contract N00014-89-J-1539  
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PROPOSAL TITLES, PROJECT PERIODS, AND FUNDING:

Intensification of Mesoscale Zooplankton Patchiness by  
Seamounts (An Accelerated Research Initiative:  
'Flow Over Abrupt Topography' proposal)

10/01/88 - 09/30/90	\$ 92,084
10/01/90 - 09/30/92	\$181,999
10/01/92 - 09/30/93	\$ 54,000

Water Column Predation Over Seamounts

10/01/93 - 09/30/95	\$ 95,988
10/01/95 - 09/30/96	No Cost Extension

19961210 081

#### PAPERS SUPPORTED BY CONTRACTS:

- Haury, L.R., C. Fey, G. Gal, A. Hobday and A. Genin 1995. Copepod carcasses in the ocean I. Over seamounts. *Marine Ecology Progress Series* 123:57-63.
- Genin, A. and L.R. Haury, L.R. 1995. Copepod carcasses in the ocean I. Near coral reefs. *Marine Ecology Progress Series* 123:65-71.
- Haney, J.C., L.R. Haury, L.S. Mullineaux and C.L. Fey 1995. Seabird aggregation at a deep North Pacific seamount. *Marine Biology* 123:1-9.
- Haury, L.R. and H. Yamazaki 1995. The dichotomy of scales in the perception and aggregation behavior of zooplankton. *Journal of Plankton Research* 17:191-197.
- Genin, A.C., C. Greene, L. Haury, P. Wiebe, G. Gal, S. Kaartvedt, E. Meir, C. Fey, and J. Dawson 1994. Zooplankton patch dynamics: daily gap formation over abrupt topography. *Deep-Sea Research* 41:941-951.
- Haury, L.R. and J.A. McGowan In Press. Time-space scales in marine biogeography. In: *UNESCO Technical Papers in Marine Science, Pelagic Biogeography*.
- Haury, L.R., A. Genin, and C. Fey In Final Prep. Zooplankton around four eastern North Pacific Ocean seamounts. *Progress in Oceanography*.

#### ABSTRACT

The influence of large seamounts on ambient oceanic biological, physical, chemical and geological environment was the focus of the "Flow Over Abrupt Topography" (TOPO) ARI. The research reported here comprised the water column zooplankton ecology component of the ARI. Our field program (1989 to 1991), centered on Fieberling Guyot (32° 25'N, 127° 47'W), with three other seamounts investigated: Dowd Guyot (13° 27'N, 119° 53' W), Northeast Bank (32° 20'N, 119° 37'W) and Sixtymile Bank (32° 05'N, 118° 15'W). Support for the studies at the latter two seamounts came from the United States-Israel Binational Science Foundation.

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